



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029**

September 19, 2016

Ms. Angel Deem
Division Director
Virginia Department of Transportation
1401 East Broad Street
Richmond, Virginia 23219

Ms. Jessie Yung
Acting Division Administrator
Federal Highway Administration
400 North 8th Street, Suite 750
Richmond, Virginia 23219-4825

Re: Hampton Roads Crossing Study Draft Supplemental Environmental Impact Statement
Chesapeake, Hampton, Newport News, Norfolk, Portsmouth, and Suffolk, Virginia CEQ No.
20160177

Dear Ms. Deem and Ms. Yung:

In accordance with the National Environmental Policy Act (NEPA) of 1969, Section 309 of the Clean Air Act and the Council on Environmental Quality regulations implementing NEPA (40 CFR 1500-1508), the United States Environmental Protection Agency (EPA) has reviewed the Hampton Roads Crossing Study (HRCS) Draft Supplemental Environmental Impact Statement (DSEIS). The DSEIS has been prepared by the Federal Highway Administration (FHWA) in conjunction with the Virginia Department of Transportation (VDOT). The DSEIS re-evaluates the findings of the Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) that were approved by the FHWA in 2001. The purpose of the HRCS is to relieve congestion at the I-64 Hampton Roads Bridge Tunnel (HRBT) in a manner that improves accessibility, transit, emergency evacuation, and military and goods movement along the primary transportation corridors in the Hampton Roads region, including the I-64, I-664, I-564, and VA 164 corridors.

The DSEIS evaluates five alternatives including the No Build.

- Alternative A (based on Alternative (CBA) 1 from the 2001 Hampton Roads Crossing Study, HRSC, FEIS) is approximately 12 miles long and impacts 7.8 acres of wetlands, 138.4 acres of essential fish habitat (EFH), 14.9 acres of forest, 1 acre of threatened and endangered (T&E) habitat, and costs \$3.3 B.

- Alternative B (based on CBA 2 from the 2001 HRCS FEIS with the addition of the VA164 Study Corridor) is approximately 26 miles long and impacts 72.6 acres of wetlands, 214.3 acres of EFH, 111.9 acres of T&E habitat, 73.1 acres of forest, and costs \$6.6 B.
- Alternative C (based on CBA 9- Preferred Alternative in 2001 HRCS FEIS, with the addition of the VA 164 Study Corridor) is approximately 40 miles long with dedicated transit facilities and impacts 547.9 linear feet of stream, 111.5 acres of wetlands, 565.4 acres of EFH, 163.9 acres of T&E habitat, 179.5 acres of forest, costs \$12.5 B.
- Alternative D is a combination of Alternatives B and C with no dedicated transit-only lanes. This alternative was not included in the 2001 FEIS and was included in response to comments and estimates prepared by the Hampton Roads Transportation Accountability Commission that suggested the organization could fund improvements to all the Study Area Corridors over time. It is approximately 55 miles long and impacts 547.9 linear feet of stream, 119.9 acres of wetlands, 636.3 acres of EFH, 153.7 acres of T&E habitat, 177.6 acres forest, and costs \$11.9 B.

The SEIS further states that given the magnitude and scope of the alternatives, it is expected that the Preferred Alternative would be implemented in stages or operationally independent sections (OISs). Different sections within an OIS could be replaced with another and OISs could be combined to form “hybrid” alternatives that could reduce cost and impacts. If a hybrid is identified as the Preferred Alternative, it would be presented to the public and fully documented in the Final SEIS (FSEIS).

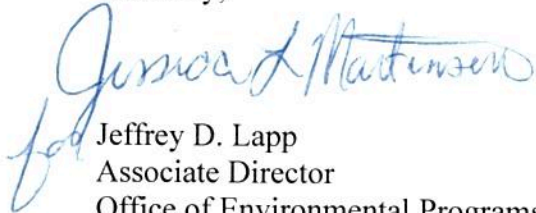
While we understand that the complexity of the project area and the SEIS conservatively estimates direct impacts associated with the project, adequate avoidance and minimization has not been applied or discussed in detail in the NEPA document. In addition, stormwater management and design adaptation have not been evaluated. These, though important features, may increase impacts. Alternative A appears to have the fewest impacts, however, the SEIS indicates that this alternative may not meet all of the project needs. Alternatives B, C, and D have significant impacts to aquatic resources, threatened and endangered species habitat, fish and terrestrial habitat, floodplains and a number other resources. There is also uncertainty to the availability of appropriate mitigation options for such large aquatic impacts. Given the number and extent of these impacts, we support evaluating a hybrid approach to meet the project needs while minimizing impacts to communities and resources. We believe that the objections we raise to the project can be alleviated by careful review and selection of sections of new proposed alignment and upgraded existing alignment including allowance for multimodal growth. We recommend avoidance of highly functioning resources, measures to avoid and minimize impacts such as bridging, innovative stormwater management, and construction approaches to minimize dredging. More information should be provided on potential dredge disposal methods, locations and impacts in the FSEIS.

Based on our review summarized above and presented in the attached Detailed Technical Comments, EPA has rated the environmental impacts associated with Alternative A as Environmental Concerns, Insufficient Information (EC2) and Alternatives B, C, and D as Environmental Objections, Insufficient Information (EO2). While we understand that Alternatives A, B, and C are based on alternatives evaluated in the Draft EIS, the addition of the VA 164 Study Area Corridor to Alternatives B and C is new. In addition, the impacts associated

with these alternatives have increased. The EPA review has identified significant impacts that should be avoided in order to adequately protect the environment. Careful selection of a preferred alternative and corrective measures to insure protection of the environment will be required to address impacts identified. A description of our rating system can be found at: www.epa.gov/nepa/environmental-impact-statement-rating-system-criteria

We look forward to continuing a close working relationship with FHWA, VDOT and the interagency team as progress is made toward selection of a preferred alternative. We suggest the project team maintain close coordination with affected residents and continue to explore methods to avoid and minimize construction and operational impacts associated with the build alternatives. If you have questions regarding these comments, the staff contact for this project is Ms. Barbara Okorn; she can be reached at 215-814-3330.

Sincerely,


Jeffrey D. Lapp
Associate Director
Office of Environmental Programs

Enclosure

(This page intentionally left blank)

Enclosure
Detailed Technical Comments for Draft Supplemental Environmental Impact Statement,
HRCS Virginia

Alternatives

- Additional detail should be provided as to why the High Bridge Crossing was dismissed.
- Stormwater management (SWM) facilities were not included within the limit of disturbance (LOD) for the alternatives. This could greatly increase impacts. SWM should not be placed in aquatic habitats. SWM should address existing and new conditions.
- Page 2-21: The 3-4-3 concept is confusing as presented. Additional information should be provided to explain how this concept can work with all the build alternatives. It is also unclear how the alternatives can be equally evaluated if the 3-4-3 will work while the presented alternative does not. Impacts associated with the 3-4-3 should be presented.
- Page 2-21: It is unclear why only Alternative C has dedicated transit facilities in specific locations.
- Additional information should be provided describing how the Craney Island Eastward Expansion may impact the proposed road construction in Alternatives B, C, and D (and vice versa). Coordination should continue with the US Army Corps of Engineers (Corps, USACE), VA Port Authority and other entities.
- Additional information should be presented on how the bridge/tunnel construction in Alternatives B, C, and D may impact navigation, especially high traffic area around Craney Island.
- Additional information should be provided on how bridge construction may effect erosion on the perimeter of Craney Island.

Social and Environmental Justice (EJ)

Potential for disruption of the current community structure is notable by the number of residential impacts and potential displacements, summarized below.

Alternative	Residential Properties	Potential Displacements
A	24	9
B	29	9
C	58	11
D	69	20

- It would be helpful to label and clarify the minority benchmark value used.
- It would be helpful if the maps showed the areas of EJ concern with respect to the various project activities. This would assist the public to view their proximity to project activities, and gain better perspective to the potential impacts of the project.

- More discussion with respect to the impact of the various aspects of the project on minority and low income populations should be provided. There may be localized impacts that may impact portions of the population that need further consideration.
- The EIS should evaluate and present information to show that tolling of roads will not impact low income communities.
- A coordination plan should be developed to assist the community with concerns and impacts related to impacts associated with the projects.

Public Health/Children's Health/Noise

- Page 3-16 states: "Each alternative would impact community facilities; however, the use and functionality of the resources would not be impacted. **Alternative A** would impact 1.4 acres of Hampton University and <0.1 acres of the Willoughby Boat Ramp. **Alternative B** would impact a total of 8.9 acres at three facilities (one school and two park and recreational facilities). **Alternative C** would impact a total of 10.0 acres at four facilities (one religious facility, one school, and two park and recreational facilities). **Alternative D** would have the largest impact to community facilities; 9.8 acres at five facilities (two schools and three park and recreational facilities). Impacts to community facilities are summarized in **Table 3-4.**" Although the use and functionality of the resources would not be impacted, please discuss the human impact associated with and specific to the sensitive resource directly impacted. In particular, EPA is concerned with school age children using schools, parks, recreational facilities, etc. in close proximity to a large transportation corridor in regards to air quality, hazardous materials exposure, noise impact on learning (indoor and outdoor). EPA is aware that a final design noise study would take place after the Preferred Alternative is selected and the project's engineering design begins. Please ensure that these concerns are addressed.
- Page 3-69 states: "Therefore, the noise barrier design parameters and cost identified in this document are preliminary and should not be considered final. A final decision on the feasibility and reasonableness of noise barriers would be made during final design when the project design is developed and traffic updated. If a noise barrier is determined to be feasible and reasonable, the affected public would be given an opportunity to decide whether they are in favor of construction of the noise barrier." Giving the public an opportunity to decide in favor of construction of the noise barrier is commendable, but what is their alternative? Please discuss. It appears that the public will be given an opportunity to express their concerns at a Public Hearing/Meeting in September. Public involvement is critical to decision-making. Please discuss how the public, especially Environmental Justice communities, will be reached. Consider local churches, libraries, local papers to advertise the upcoming meeting. Also, has an assessment been conducted to determine the population of children in the area evaluated for noise barriers? The ratio of population impact (households including children) should be included in the assessment. In addition, to effective noise attenuation barriers, aesthetic value should also be considered. Noise impacts are summarized from the EIS below.

Alternative	Noise Impacts
A	6, 953
B	1,987
C	1,014
D	2,548

- Page 3-174 states: “Specific trucking routes, frequency of trips, or waste disposal destinations will be identified as part of the construction documents for the Preferred Alternative and after issuance of the Record of Decision (ROD).” Construction routes/corridors and staging areas should be identified and included in the environmental analysis to determine potential risks to human health and the environment. EPA is concerned with potential impacts to children and EJ communities. Exposure risks from dust, hazardous materials, noise and traffic should be address in the FSEIS. In addition, please address if Contingency Plans are in place to address potential risks from spills, hazardous materials exposure, etc.
- We suggest that the project team closely coordinate with residents related to displacements and other impacts.
- In addition to considering EJ and children’s health, the project team should consider health impact assessments, which could help to define the services or interventions required to help to prevent or mitigate health problems associated to this type of project, if any. HIA is a tool designed to investigate how a proposed program, project, policy, or plan may impact health and well-being and inform decision-makers of potential outcomes before the decision is made. An HIA could allow input from the public and other stakeholders, including those potentially affected by the proposed action. EPA is available for further discussion and guidance on this matter. Please consider the following: <http://www.humanimpact.org/new-to-hia/faq/>
<https://www.epa.gov/healthresearch/health-impact-assessments>

Historic Resources

EPA appreciates the coordination done with the State Historic Preservation Office (SHPO) and the information provided in the DSEIS. Potential impacts are noted, and summarized below. Approaches to avoid or minimize historic impacts should be fully explained for the preferred alternative in the Final SEIS. As stated on page 3-164, "Once a Preferred Alternative has been selected and preliminary engineering has been further refined, VDOT and FHWA will reassess the effects of the project on architectural historic properties and coordinate the findings with the SHPO and other consulting parties before release of a Final SEIS. Should any of the architectural historic properties be adversely affected, FHWA and VDOT will consult with the SHPO and other parties to the Section 106 process to determine appropriate measures that would avoid, minimize, or mitigate the adverse effects. These measures would constitute commitments that would be incorporated as stipulations in a legally binding agreement document executed by the FHWA, the SHPO, the ACHP, VDOT, and other parties as appropriate to conclude the Section 106 process." It is expected that all measures to avoid or minimize historic impacts are exhausted and if a Programmatic Agreement is necessary, please detail impacts and

mitigation for the preferred alternative in the Final SEIS. The Programmatic Agreement (PA) should also be included in the Final SEIS (if completed or include a draft PA). Impacts are summarized below.

Alternative	Historic Resources	Archaeology Resources
A	6	6
B	11	10
C	10	26
D	16	33

Aquatic Resources

Aquatic resources are highly impacted by proposed action alternatives. A summary of some critical impacts are included in the letter, the table and comments below.

Alternative	Navigable waters (acres)	Floodplains (acres)	Subaquatic Vegetation (SAV) (acres)	EFH (acres)	Wetlands (acres)	Stream (lin ft)
<u>A</u>	147.3	112.6	1.8	138.4	7.8	0
<u>B</u>	215.6	213.3	1.8	214.3	72.6	0
<u>C</u>	369.9	213.3	1.8	565.4	111.5	547.9
<u>D</u>	480.9	313.3	1.8	636.3	119.9	547.9

- Offsetting the loss of aquatic resource or reduction in functions with mitigation will be difficult and is a significant issue, especially given the extensive impacts proposed. Tidal wetlands, shallow water habitats, including sand and mudflats, and mature, high functioning forested hardwood wetlands are difficult to replace resources. Mitigation banks generally do not offer suitable mitigation for these impacts. The Final SEIS should identify viable mitigation options, including banks that may have tidal credits or opportunities to replace or restore resources.
- As discussed, shallow water habitat provides valuable habitat forage, refuge, spawning and rearing habitat for fish, shellfish, and benthos. Mitigation for loss of these resources and their functions will be an important component of any project to avoid losses. We do not support replacing tidal resources with nontidal resources or mudflats with vegetated wetlands.
- Wetland assessments were conducted on “representative” wetlands; however, it appears that these wetlands were primarily selected based on whether they were accessible. When a preferred alignment is identified, additional assessment of wetlands may be necessary. This will require coordination with EPA and the Corps for identifying appropriate steps for functional assessment of the resources and approaches to identify resources that should be avoided. After avoidance and minimization has been

maximized, the agencies should work to identify mitigation that can replace lost functions of resources in the watershed.

- We continue to encourage an alternative that avoids impacts to aquatic resources, especially high-functioning resources. Of the seven forested mineral flat wetlands assessed with HGM, most had high scores for habitat functions, high water regime and carbon cycling. Wetland H92 had similar scores to the reference site, and surpassed the reference site in plant community score. Direct and secondary impacts to these resources should be avoided.
- The DSEIS discusses perennial and intermittent streams. Are ephemeral streams present? If so, they should be included in the evaluation.
- All of the alternatives impact aquatic habitats. As presented it is difficult to determine the various impacts. The DSEIS indicates that Alternatives A and B do not have stream impacts; please confirm.
- Page 3-75: EPA should be included in the mitigation discussions.
- The tables on Page 3-86 are confusing. It is unclear why wetland impact numbers are a little different.
- The EIS should evaluate remnant wetlands. There may be instances where the remaining portion of wetlands does not provide the original functions due to project impacts.
- Page 3-102 states that there may be changes in salinity in specific areas as a result of the project, but does not discuss any implications. Additional information should be provided.
- Efforts should be made to reduce the amount of Essential Fish Habitat (EFH) and Habitat Area of Particular Concern (HAPC). Coordination should continue with the appropriate agencies and a mitigation plan should be developed for unavoidable impacts as the project moves forward.
- Timing of dredging and construction should be carefully chosen so as to cause the least impact to migration and spawning of anadromous fish and other EFH species.
- Given the large quantity of material being dredged, beneficial reuse of the dredged material should be required. The *Indirect and Cumulative Effects Technical Report* indicates that several options are available to dispose of dredge material, depending on material suitability and the regional capacity for disposal. Impacts from disposal of dredge material will have to be carefully considered and discussed in detail for the preferred alternative.

- To address water quality and contaminant concerns, a monitoring plan should be developed to address pre-, during, and post-dredging.
- We understand that Virginia Institute of Marine Science (VIMS) is evaluating the hydrodynamic effects of the potential structures in open waters, including tunnels. This information should be provided in the Final SEIS.

Terrestrial Resources

- Coordination should continue with the US Fish and Wildlife Service regarding migratory birds, nesting colonies and threatened and endangered species.
- Commitment to accommodating wildlife passage should be included in the Final SEIS and ROD.
- Page 3-117 indicates that coordination and permitting will help protect terrestrial habitat and wildlife. Please provide more details about how this will work.
- Efforts should be made to avoid and minimize impacts to terrestrial resources. Corridors should be maintained to the maximum extent possible for wildlife travel. Upland buffers should also be maintained around aquatic habitat.

Construction

- The EIS should give estimates of how much borrow and fill will be needed and how waste material will be disposed of or borrow will be delivered. For example, there may be a significant increase in traffic from hauling away excess dirt, etc. What routes would these trucks take, how many trips/day and for what duration?
- More detail on methods of construction including near sensitive resources if unavoidable, tunnel placement, dredging, pier placement and construction method for bridging (e.g. ways to minimize vibration damage to fish populations), potential for trestle construction, etc. should be evaluated for the preferred alternative in the Final SEIS. Comparison of potential impacts should be tabulated to the level of detail possible and discussion given to approaches to minimize impacts.

Storm Water Management

- Other than stating that the project will comply with the Virginia Stormwater Management Program, the DSEIS provides very little detail on the specific stormwater management measures that will be proposed. We suggest that it is effective to look at potential locations and styles of SWM facilities early in project development and discuss how SWM designs are integrated into the overall project; this should be included in the NEPA process. EPA would be pleased to participate with the team in discussion of SWM options, locations that should be avoided, particularly aquatic habitat. As such, it is

recommended that stormwater management designs be incorporated and cited in upland areas early into the breakout projects.

GHG/Climate Change

- EPA recommends that Federal agencies use a reasonable approach in the consideration of Greenhouse Gas (GHG) emissions and climate change impacts in the NEPA analysis. This approach includes an estimate of the GHG emissions associated with the project during construction and operation, a qualitative description of relevant climate change impacts, and an analysis of reasonable alternatives and/or practicable mitigation measures to reduce project-related GHG emissions. The DSEIS does not include this reasonable approach. The NEPA analysis did not address the appropriateness of considering changes to the design of the proposal to incorporate GHG reduction measures and resilience to foreseeable climate change. The DSEIS did not state whether commitments will be made to ensure implementation of design or other measures to reduce GHG emissions or to adapt to climate change impacts.
- The DSEIS does not consider potential changes to the affected environment that may occur due to climate change. EPA recommends the NEPA analysis describe future climate scenarios to help decision makers and the public consider whether the environmental impacts of the alternatives would be exacerbated by climate change. If impacts may be exacerbated by climate change, additional mitigation measures may be warranted.
- In addition, we recommend considering climate adaptation measures based on how future climate scenarios may impact the project. In addition to the resources used in the DSEIS, we suggest that the National Climate Assessment (NCA), released by the U.S. Global Change Resource Program contains scenarios for regions and sectors, including energy and transportation. Using NCA or other peer reviewed climate scenarios to inform alternatives analysis and possible changes to the proposal can improve resilience and preparedness for climate change.
- The estimated GHG emissions can serve as a reasonable proxy for climate change impacts when comparing the proposal and alternatives. In disclosing the potential impacts of the proposal and reasonable alternatives, consideration should be given to whether, and to what extent, the impacts may be exacerbated by expected climate change in the action area, as discussed in the “affected environment” section.
- The NEPA analysis should describe measures to reduce GHG emissions associated with the project, including reasonable alternatives or other practicable mitigation opportunities and disclose the estimated GHG reductions associated with such measures. The alternatives analysis should, as appropriate, consider practicable changes to the proposal to make it more resilient to anticipated climate change. EPA further recommends that the Record of Decision (ROD) commits to implementation of reasonable mitigation measures that would reduce project-related GHG emissions.

- In addition to the mitigation measures for indirect energy consumed during construction, VDOT should also consider ways to reduce energy use from maintenance and operation of the transportation facility. VDOT should also investigate the use of embodied energy construction materials as a way of reducing energy consumption and reducing GHG emissions.
- As the document states, the Virginia tidewater area is experiencing significant land subsidence. According to the USGS, land subsidence has contributed to the region's highest rates of sea-level rise on the Atlantic Coast of the United States (<http://pubs.usgs.gov/circ/1392/pdf/circ1392.pdf>). Data indicates that land subsidence has been responsible for more than half the relative sea-level rise measured in the region. Land subsidence increases the risk of flooding in low-lying areas, which in turn has important economic, environmental, and human health consequences for the heavily populated and ecologically important southern Chesapeake Bay region. The SEIS should include more details of the environmental consequences of land subsidence on the region as well as any adaption measures that may be proposed for the project. Alternatives should discuss predicted conditions and how the project design has responded to the anticipated conditions.
- As reported in the DSEIS, North Atlantic Coast Comprehensive Study (NACCS) sponsored by the USACE provided a risk management framework to address the impacts of climate change and sea level rise in the region along with supporting resilient coastal communities and robust, sustainable coastal landscape systems. The NACCS further goes on to identify specific areas high risk for coastal flooding. The City of Norfolk has been identified as one of those high risk areas. VDOT should present findings of the NACCS and discuss in the EIS features that can be included in design to address resiliency. VDOT should continue to coordinate the USACE to identify flood risk and remain up-to-date on the issue. The FSEIS and ROD should commit to further coordination and implementation of future adaptation measures.
- The SEIS indicates that tidal wetlands, beaches, and coastal primary sand dunes under the Virginia Marine Resources Commission's (VMRC) jurisdiction may be present within the Study Area Corridors. The SEIS states "governmental activity in those tidal wetlands and coastal primary sand dunes are authorized if they are owned or leased by the Commonwealth or a political subdivision thereof." Impacts to these resources should be assessed and, if necessary, mitigated as these resources may contribute to coastal resiliency.

Cumulative Impacts

- Given the historic impacts to wetlands and other aquatic resources in the area, avoidance and minimization of impacts is critical. Cumulative impacts from the proposed project alignment on aquatic resources will need to be evaluated in detail in the FSEIS.
- *The Indirect and Cumulative Effects Technical Report* characterizes a number of potential indirect effects to wetlands, streams, and floodplains; however it states that these "would be minimized by regulations governing construction impacts to Waters of the US." The

specific measures taken to avoid and minimize these impacts should be provided with the preferred alternative. These measures should include bridging, maintaining natural stream bottoms, and reducing the roadway footprint and median width, incorporating wildlife passage, maintaining patterns of hydrology, and a number of others.

- *The Indirect and Cumulative Effects Technical Report* states “Under the No-Build Alternative, the existing fragmented and limited wildlife habitat existing within and adjacent to the Study Area Corridors would continue to degrade.” The proposed alternative should offset impacts by proposing improvements that could be incorporated into the project; for example, modifying or upgrading existing crossings to provide wildlife passage, improving buffers between the highway and habitat, increase habitat when possible, e.g. for pollinators.
- The EIS mentions numerous times that many of the natural resources are already impacted by the developed project area, it is important to note that this area has very diverse aquatic and terrestrial habitats that provides many functions such as meeting life stages of listed species and other species of concern, buffers from storm events, etc. While some of these areas may be considered degraded, they are the only areas available to wildlife species in the area. In addition, these resources have potentially been impacted by many other projects over time and could be in the future. Every effort should be made to avoid and minimize these impacts.

